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| 09/842,163 | 04/26/2001 | Tomohiro Kita | 206450US2 | 6884 |

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EXAMINER

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| ART UNIT | PAPER NUMBER |
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2618

DATE MAILED: 07/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|-------------------------------|--------------------------------|--|
| Office Action Summary | Application No. 09/842,163 | Applicant(s) KITA, TOMOHIRO | |
| | Examiner Raymond S. Dean | Art Unit 2618 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 10 - 18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 10 - 18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 April 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see remarks filed April 24, 2006 with respect to the rejection(s) of claim(s) 1 – 9 under 35 U.S.C. 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of newly found prior art Nossen (5,392,450).

Nossen teaches a method for allocating satellite channel used in satellite communications system transmitting data bi-directionally between central station and a plurality of remote stations via a satellite in which a plurality of first forward satellite channels used for transmitting data from said each remote station are fixedly previously set (Figure 1, Column 2 lines 52 – 57, Column 4 lines 32 – 37, line 55, there are a plurality of VSATs, with each terminal having access to a reservation channel (25-2), this is a conventional hub-spoke network comprising a hub and remote stations i.e. VSATs, typical hub-spoke networks comprise channels that are fixedly previously set), comprising: allocating a previously set second forward satellite channel, separate from the plurality of first forward satellite channels and also used for transmitting data from said remote stations, and having a larger capacity than that of individual of the plurality of first forward satellite channels (Figure 3, Column 4 lines 53 – 57, lines 66 – 68, Column 5 lines 1 – 11, the reservation channels have the capacity to handle requests for uplinking message traffic whereas the return channels have the capacity

Art Unit: 2618

to handle the actual uplinking of message traffic thus requiring a larger capacity than said reservation channels), in a case that a predetermined condition related to the data transmission from one of the remote stations is satisfied, to the one of the remote stations satisfying said condition (Column 7 lines 62 – 68, Column 8 lines 1 – 2, a condition is the VSAT not about to receive a message).

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 10 – 12, 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Nossen (5,392,450).

Regarding Claim 10, Nossen teaches a method for allocating satellite channel used in satellite communications system transmitting data bi-directionally between central station and a plurality of remote stations via a satellite in which a plurality of first forward satellite channels used for transmitting data from said each remote station are fixedly previously set (Figure 1, Column 2 lines 52 – 57, Column 4 lines 32 – 37, line 55, there are a plurality of VSATs having access to a reservation channels (25-2), this is a conventional hub-spoke network comprising a hub and remote stations i.e. VSATs, typical hub-spoke networks comprise channels that are fixedly previously set),

comprising: allocating a previously set second forward satellite channel, separate from the plurality of first forward satellite channels and also used for transmitting data from said remote stations, and having a larger capacity than that of individual of the plurality of first forward satellite channels (Figure 3, Column 4 lines 53 – 57, lines 66 – 68, Column 5 lines 1 – 11, the reservation channels have the capacity to handle requests for uplinking message traffic whereas the return channels have the capacity to handle the actual uplinking of message traffic thus requiring a larger capacity than said reservation channels), in a case that a predetermined condition related to the data transmission from one of the remote stations is satisfied, to the one of the remote stations satisfying said condition (Column 7 lines 62 – 68, Column 8 lines 1 – 2, a condition is the VSAT not about to receive a message).

Regarding Claim 11, Nossen teaches a satellite communications system for transmitting data from a central station to a plurality of remote stations through backward satellite channel and for transmitting data from said plurality of remote stations to said central station through a fixedly predetermined plurality of forward satellite channels (Figure 1, Column 2 lines 52 – 57, Column 4 lines 32 – 37, lines 53 – 57, there are a plurality of VSATs having access to reservation channels (25-2), the outbound channel (25-1) is the backward channel, this is a conventional hub-spoke network comprising a hub and remote stations i.e. VSATs, typical hub-spoke networks comprise channels that are fixedly previously set), wherein: at least one of said remote stations includes means for transmitting a channel request data for use permission to use a second forward satellite channel previously set and separate from said first

Art Unit: 2618

forward satellite channels and having a larger capacity than that of individual of the plurality of first forward satellite channels (Figure 3, Column 4 lines 53 – 57, lines 66 – 68, Column 5 lines 1 – 11, Column 7 lines 36 – 39, the reservation channels have the capacity to handle requests for uplinking message traffic whereas the return channels have the capacity to handle the actual uplinking of message traffic thus requiring a larger capacity than said reservation channels), the second forward satellite channel to transmit data from the one of said remote stations to said central station (Column 5 lines 1 – 11, the return channel (25-3) is used by the VSATs to transmit data to the NCT via the satellite), and said central station includes means for allocating said second forward satellite channel for the purpose of data transmission to the one of the remote stations on condition that said second forward satellite channel is unoccupied (Column 7 lines 55 – 68, Column 8 lines 1 – 2, when there is no backlog of higher priority data the return channel will be unoccupied).

Regarding Claim 12, Nossen teaches all of the claimed limitations recited in Claim 11. Nossen further teaches wherein said means for transmitting said channel request data transmits said channel request data to said central station in case that a request-to-send data larger than a predetermined capacity is generated; and said second forward satellite channel is a channel for transmitting said data larger than the predetermined capacity (Figure 3, Column 4 lines 53 – 57, lines 66 – 68, Column 5 lines 1 – 11, the VSAT requests transmission on the return channel (25-3) when there is a desire to uplink message traffic, the reservation channel (25-2) only has the capacity to

handle request data and cannot accommodate uplink message traffic thus the larger capacity return channel (25-3) will be used for the uplink message traffic).

Regarding Claim 18, Nossen teaches an earth station for satellite communications transmitting data to a plurality of other earth stations through backward satellite channel and receiving data transmitted from said plurality of other earth stations through fixedly predetermined plurality of first forward satellite channels (Figure 1, Column 2 lines 52 – 57, Column 4 lines 32 – 37, lines 53 – 57, there are a plurality of VSATs having access to reservation channels (25-2), the outbound channel (25-1) is the backward channel, this is a conventional hub-spoke network comprising a hub and remote stations i.e. VSATs, typical hub-spoke networks comprise channels that are fixedly previously set), comprising: discriminating means for discriminating whether a predetermined condition related to the data transmission from any one of said other earth stations is satisfied or not (Column 7 lines 55 – 68, Column 8 lines 1 – 2, a condition is whether or not the VSAT is about to receive a message); channel allocating means for allocating transmission a second forward satellite channel previously set and with a larger capacity than that of individual of said plurality of first forward satellite channels (Figure 3, Column 2 lines 52 – 57, Column 4 lines 32 – 37, lines 53 – 57, lines 66 – 68, Column 5 lines 1 – 11, Column 7 lines 55 – 68, Column 8 lines 1 – 2, the reservation channels have the capacity to handle requests for uplinking message traffic whereas the return channels have the capacity to handle the actual uplinking of message traffic thus requiring a larger capacity than said reservation channels, this is a conventional hub-spoke network comprising a hub and remote

Art Unit: 2618

stations i.e. VSATs, typical hub-spoke networks comprise channels that are fixedly previously set), the second forward satellite channel transmitting data to the earth station and being separate from said plurality of first forward satellite channels, for data transmission in case that said predetermined condition is satisfied by said discriminating means, to the other earth station satisfying said condition (Column 7 lines 55 – 68, Column 8 lines 1 – 2, if the VSAT is not about to receive a message then the condition is satisfied).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nossen (5,392,450) in view of Hotta et al. (5,274,626).

Regarding Claim 13, Nossen teaches all of the claimed limitations recited in Claim 11. Nossen does not teach wherein said plurality of first forward satellite channel corresponds to a predetermined first uplink frequency band or to one of plural time slots set within a predetermined frame; and said second forward satellite channel corresponds to a second uplink frequency band different from said first forward frequency band.

Hotta teaches said plurality of first forward satellite channel corresponds to a predetermined first uplink frequency band or to one of plural time slots set within a predetermined frame (Column 6 lines 24 – 29); and said second forward satellite channel corresponds to a second uplink frequency band different from said first forward frequency band (Column 6 lines 24 – 29).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the satellite system of Nossen with the SCPC architecture of Hotta for the purpose of quickly setting up satellite links without any need to gather other at an uplinking teleport, which is a typical result of using an SCPC architecture.

6. Claim 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nossen (5,392,450) in view of Courtney et al. (US 6,665,518).

Regarding Claim 14, Nossen teaches all of the claimed limitations recited in Claim 11. Nossen does not teach wherein said plurality of first forward satellite channel corresponds to a predetermined first uplink frequency band or to m pieces among plural time slots set within a predetermined frame; and said second forward satellite channel corresponds to n ($n > m$) pieces of the time slots other than said time slots set within said first uplink frequency band.

Courtney further teaches wherein said plurality of first forward satellite channel corresponds to a predetermined first uplink frequency band or to m pieces among the plural time slots set within a predetermined frame (Column 3 lines 49 – 59, the time

Art Unit: 2618

slots can be assigned down to any level of granularity thus the time slots can be divided into smaller time slices); and said second forward satellite channel corresponds to n ($n > m$) pieces of the time slot other than said time slots set within said first uplink frequency band (Column 3 lines 49 – 59, the time slots can be assigned down to any level of granularity thus the time slots can be divided into smaller time slices).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the TDMA air interface of Courtney in the satellite system of Nossen as an alternative to the FDMA protocol in Nossen thus providing faster transmission rates due to the multiplexing of time slots at one carrier frequency.

7. Claim 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nossen (5,392,450) in view of Montpetit (US 6,366,761).

Regarding Claim 15, Nossen teaches Nossen teaches a satellite communications system for transmitting data from a central station to a plurality of remote stations through backward satellite channel and for transmitting data from said plurality of remote stations to said central station through a fixedly predetermined plurality of forward satellite channels (Figure 1, Column 2 lines 52 – 57, Column 4 lines 32 – 37, lines 53 – 57, there are a plurality of VSATs having access to reservation channels (25-2), the outbound channel (25-1) is the backward channel, this is a conventional hub-spoke network comprising a hub and remote stations i.e. VSATs, typical hub-spoke networks comprise channels that are fixedly previously set), said central station comprising: channel allocating means for allocating a second forward

Art Unit: 2618

satellite channel previously set with a larger capacity than individual of said plurality of first forward satellite channels to said one of the remote stations for data transmission (Figure 3, Column 2 lines 52 – 57, Column 4 lines 32 – 37, lines 53 – 57, lines 66 – 68, Column 5 lines 1 – 11, Column 7 lines 55 – 68, Column 8 lines 1 – 2, the reservation channels have the capacity to handle requests for uplinking message traffic whereas the return channels have the capacity to handle the actual uplinking of message traffic thus requiring a larger capacity than said reservation channels, this is a conventional hub-spoke network comprising a hub and remote stations i.e. VSATs, typical hub-spoke networks comprise channels that are fixedly previously set), the second forward satellite channel, being separate from said plurality of first forward satellite channels, being used for data transmission in case a predetermined condition is satisfied (Column 7 lines 55 – 68, Column 8 lines 1 – 2, if the VSAT is not about to receive a message then the condition is satisfied).

Nossen does not teach data accumulating means for accumulating respectively in each said remote station the amount of data transmitted from said respective remote stations during the data transmission; discriminating means for discriminating whether the data accumulated by said data accumulating means exceeds a reference amount of data or not; and channel allocating means for allocating a second forward satellite channel previously set with a larger capacity than individual of said plurality of first forward satellite channels and separate from said plurality of first forward satellite channels, to said one of the remote stations for data transmission in case that said

Art Unit: 2618

accumulated amount of data for said one of the remote stations is discriminated to exceed said reference amount of data by said discriminating means.

Montpetit teaches data accumulating means for accumulating respectively in each said remote station the amount of data transmitted from said respective remote stations during the data transmission (Figures 3, 6, Column 7 lines 23 – 30, Column 9 lines 1 – 39); discriminating means for discriminating whether the data accumulated by said data accumulating means exceeds a reference amount of data or not (Column 9 lines 1 – 39); and channel allocating means for allocating satellite channels in case that said accumulated amount of data is discriminated to exceed said reference amount of data by said discriminating means (Column 9 lines 40 – 47).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Nossen with the allocation circuitry of Montpetit for the purpose of providing a system with bandwidth on-demand capability thereby enabling the capacity for data transmission to be efficiently allocated as taught by Montpetit.

8. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nossen (5,392,450) in view of Montpetit (US 6,366,761), as applied to Claim 15 above, and further in view of Hotta et al. (5,274,626).

Regarding Claim 16, Nossen in view of Montpetit teaches all of the claimed limitations recited in Claim 11. Nossen in view of Montpetit does not teach wherein said plurality of first forward satellite channels corresponds to a predetermined first

Art Unit: 2618

uplink frequency band or to one of plural time slots set within a predetermined frame; and said second forward satellite channel corresponds to a second uplink frequency band different from said first forward frequency band.

Hotta teaches said plurality of first forward satellite channel corresponds to a predetermined first uplink frequency band or to one of plural time slots set within a predetermined frame (Column 6 lines 24 – 29); and said second forward satellite channel corresponds to a second uplink frequency band different from said first forward frequency band (Column 6 lines 24 – 29).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the satellite system of Nossen in view of Montpetit with the SCPC architecture of Hotta for the purpose of quickly setting up satellite links without any need to gather other at an uplinking teleport, which is a typical result of using an SCPC architecture.

9. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nossen (5,392,450) in view of Montpetit (US 6,366,761), as applied to Claim 15 above, and further in view of Courtney et al. (US 6,665,518).

Regarding Claim 17, Nossen in view of Montpetit teaches all of the claimed limitations recited in Claim 15. Nossen in view of Montpetit does not teach wherein said plurality of first forward satellite channel corresponds to a predetermined first uplink frequency band or to m pieces among plural time slots set within a predetermined

frame; and said second forward satellite channel corresponds to n ($n > m$) pieces of the time slots other than said time slots set within said first uplink frequency band.

Courtney further teaches wherein said plurality of first forward satellite channel corresponds to a predetermined first uplink frequency band or to m pieces among the plural time slots set within a predetermined frame (Column 3 lines 49 – 59, the time slots can be assigned down to any level of granularity thus the time slots can be divided into smaller time slices); and said second forward satellite channel corresponds to n ($n > m$) pieces of the time slot other than said time slots set within said first uplink frequency band (Column 3 lines 49 – 59, the time slots can be assigned down to any level of granularity thus the time slots can be divided into smaller time slices).

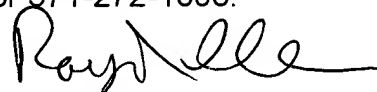
It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the TDMA air interface of Courtney in the satellite system of Nossen in view of Montpetit as an alternative to the FDMA protocol in Nossen thus providing faster transmission rates due to the multiplexing of time slots at one carrier frequency.

Conclusion

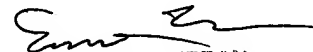
10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Raymond S. Dean whose telephone number is 571-272-7877. The examiner can normally be reached on Monday-Friday 6:00-2:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward F. Urban can be reached on 571-272-7899. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Raymond S. Dean
July 13, 2006



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